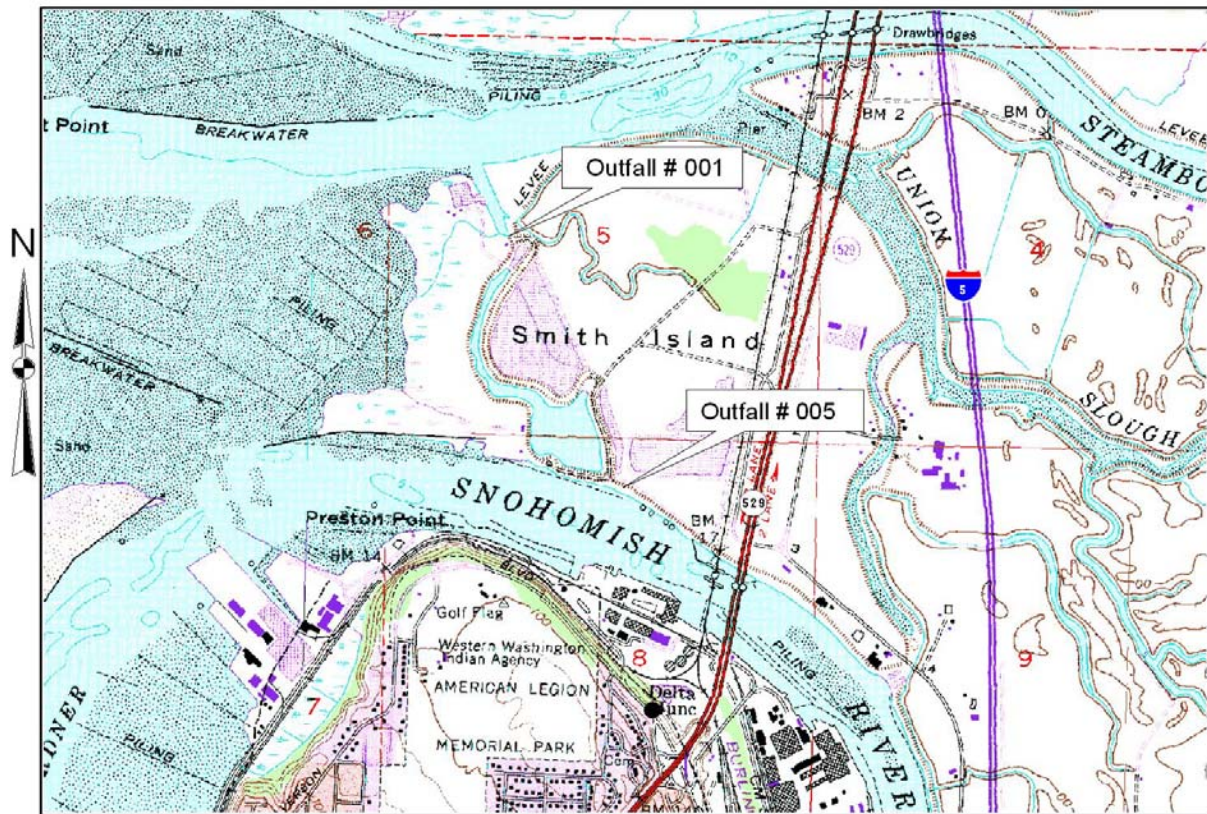


FACT SHEET FOR NPDES PERMIT WA-003197-6
FACILITY NAME - WEYERHAEUSER SMITH ISLAND SITE



Weyerhaeuser Smith Island Site

Figure 1

SUMMARY

This fact sheet is a companion document to the National Pollutant Discharge Elimination System (NPDES) Permit No. **WA-003197-6** for the Weyerhaeuser Smith Island Solid Waste (Woodwaste) Landfill Site.

The Department of Ecology (the Department) is issuing this permit to allow the discharge of stormwater containing treated landfill leachate to waters (the Snohomish River) of the state of Washington. WA-003197-6 is a new permit for this site since the associated Kraft Pulp Mill facility is no longer in operation; however, a new SEPA review is not required because this is an existing discharge. The fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical basis for those decisions. The fact sheet and draft permit are available for review (see Appendix A - *Public Involvement* for more detail on the public notice procedures). Definitions are included in Appendix B.

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 Revised Code of Washington (RCW) which defines the Department of Ecology's authority and obligations in administering the Wastewater Discharge Permit Program.

The regulations adopted by the state include procedures for issuing permits (Chapter 173-220 Washington Administrative Code [WAC]), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty (30) days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A—*Public Involvement* of the fact sheet for more detail on the public notice procedures).

The fact sheets and draft permits have been reviewed by the Permittee. Errors and omissions identified in those reviews have been corrected before going to public notice. The public comment period has closed, and the Department has summarized the substantive comments and the response to each comment. The summary and response to comments are a part of the file on the permit, and parties submitting comments received a copy of the Department's response. Comments and the resultant changes to the permit are summarized in Appendix C—*Response to Comments*.

GENERAL INFORMATION	
Applicant	WEYERHAEUSER COMPANY P O Box 9777 Federal Way, WA 98063-9777
Facility Name and Address	Weyerhaeuser Smith Island Site West of State Route 529 Everett, WA 98201
Type of Facility	Solid Waste Landfill - Nonputrescible
SIC Code	4953
Discharge Location	Water Body Name: Snohomish River (locations near River Mile 1) <u>Outfall #001</u> <u>Outfall #005</u> (temporary outfall) Latitude: 48° 01' 53" N Latitude: 48° 01' 16" N Longitude: 122° 12' 10" W Longitude: 122° 11' 34" W
Water Body ID Number	Outfall #001 – 1221985480290 Outfall #005 – 1221923480201 (temporary outfall)

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

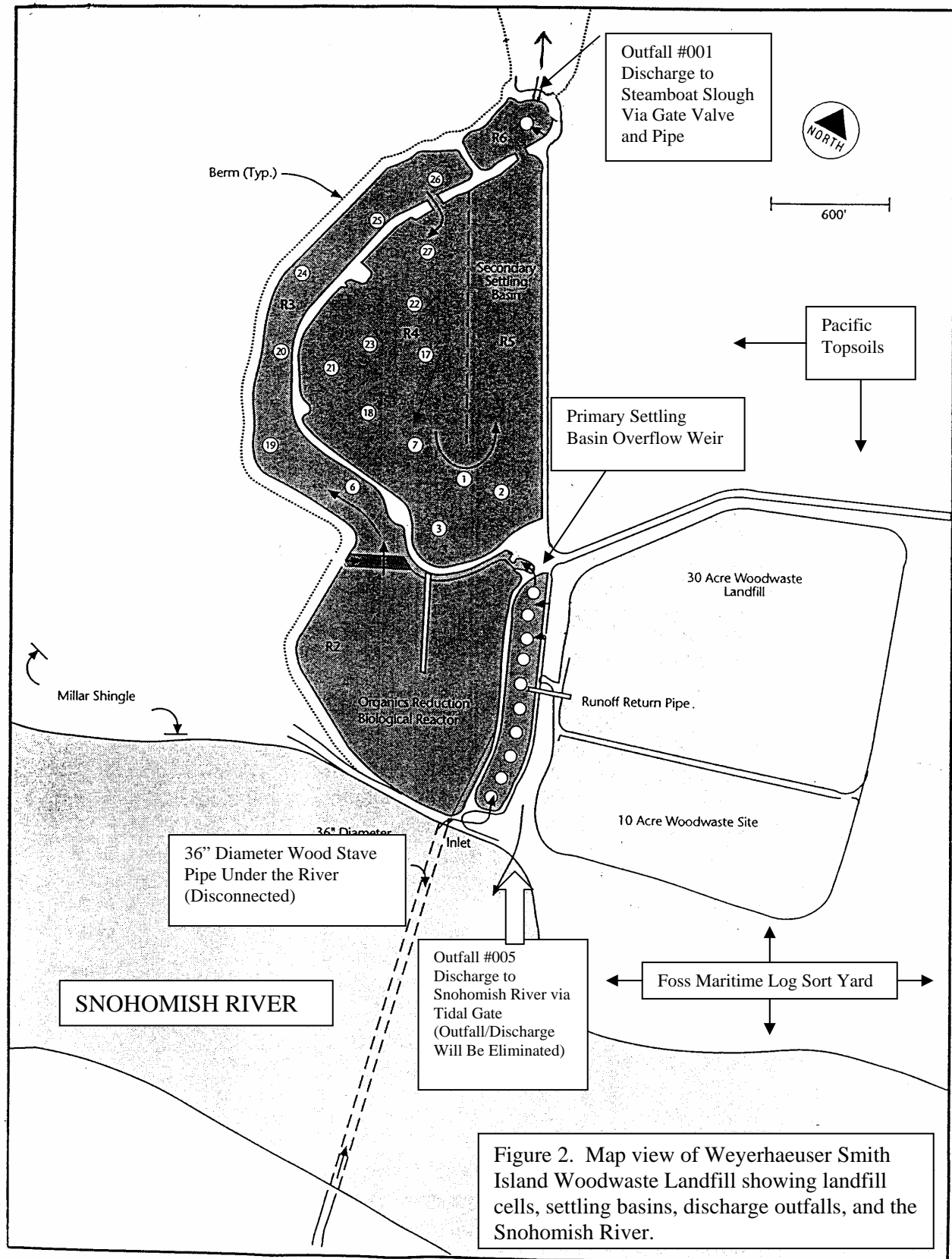
HISTORY

The Weyerhaeuser Smith Island Woodwaste Landfill (WSIWL) site is located on Smith Island. Smith Island is a distributary bar of the Snohomish River and is located on the north side of the main channel of the Snohomish River between the cities of Everett and Marysville (Figure 1 on cover page). The confluence of two Snohomish River distributaries, Union Slough and Steamboat Slough, occurs at the north end of Smith Island. Possession Sound is located less than one mile west of Smith Island.

Weyerhaeuser Company operated a Kraft Mill across the main channel of the Snohomish River (south) from Smith Island from 1956 to 1992. The Kraft Mill closed down in 1992 and has since been demolished. Sewered pulp mill and pulp machine solids (hereafter termed “woodwaste”) generated from the Kraft Mill were discharged (via a 36-inch pipe running under the Snohomish River) to a primary settling basin on Smith Island (Figure 2). The woodwaste consisted of Kraft pulp, pulp machine solids, and calcium compounds. Weyerhaeuser periodically dredged the primary settling basin and placed the woodwaste in two adjacent landfills located directly east of the settling basin. The 36-inch pipe running under the Snohomish River has since been disconnected. These landfills total 45 acres in size. The landfill has not received woodwaste since the Kraft Mill closed in 1992. Wastewaters discharge from the primary settling basin to a 60-acre extended aeration lagoon, then discharge to Outfall #001. In 1996, most of the accumulated secondary sludge was dredged, dewatered, and transported to an off-site landfill. All aerators had been removed from the treatment system by 2001. Three aerators were later reactivated and are currently available for use.

Weyerhaeuser has conducted quarterly ground water monitoring at the site and has submitted annual reports to Snohomish Health District (SHD) since 1987. An Environmental Impact Statement (EIS) was completed in 1989 to examine potential impacts of the landfill on the surrounding environment. The EIS was also completed to support permitting of the woodwaste landfill under SHD jurisdiction (EHD 8-30 Regulations Governing Solid Waste Handling). On October 30, 1992, Weyerhaeuser submitted a request to the SHD for a soil cover variance for the landfill. In January 1993, the Department granted the variance to the closure per WAC 173-304-462 (2) (h).

Weyerhaeuser has applied for closure of the landfill under the Washington State Minimum Functional Standards (MFS) for Solid Waste Handling, Chapter 173-304 WAC in agreement with the SHD. On August 16, 1999, SHD approved a work plan (with conditions) for closure of the landfill, but closure has not yet been approved. In response to conditions presented in the work plan for closure of the landfill, Weyerhaeuser generated a site characterization report in 2001. This report includes hydrogeologic characterization of the site, and sampling and analysis of woodwaste solids, woodwaste and perimeter berm pore water, soil, ground water, and surface water. The site characterization report also included preliminary identification of potential landfill-related contaminants, contaminant migration pathways, and contaminant discharge to receptors.



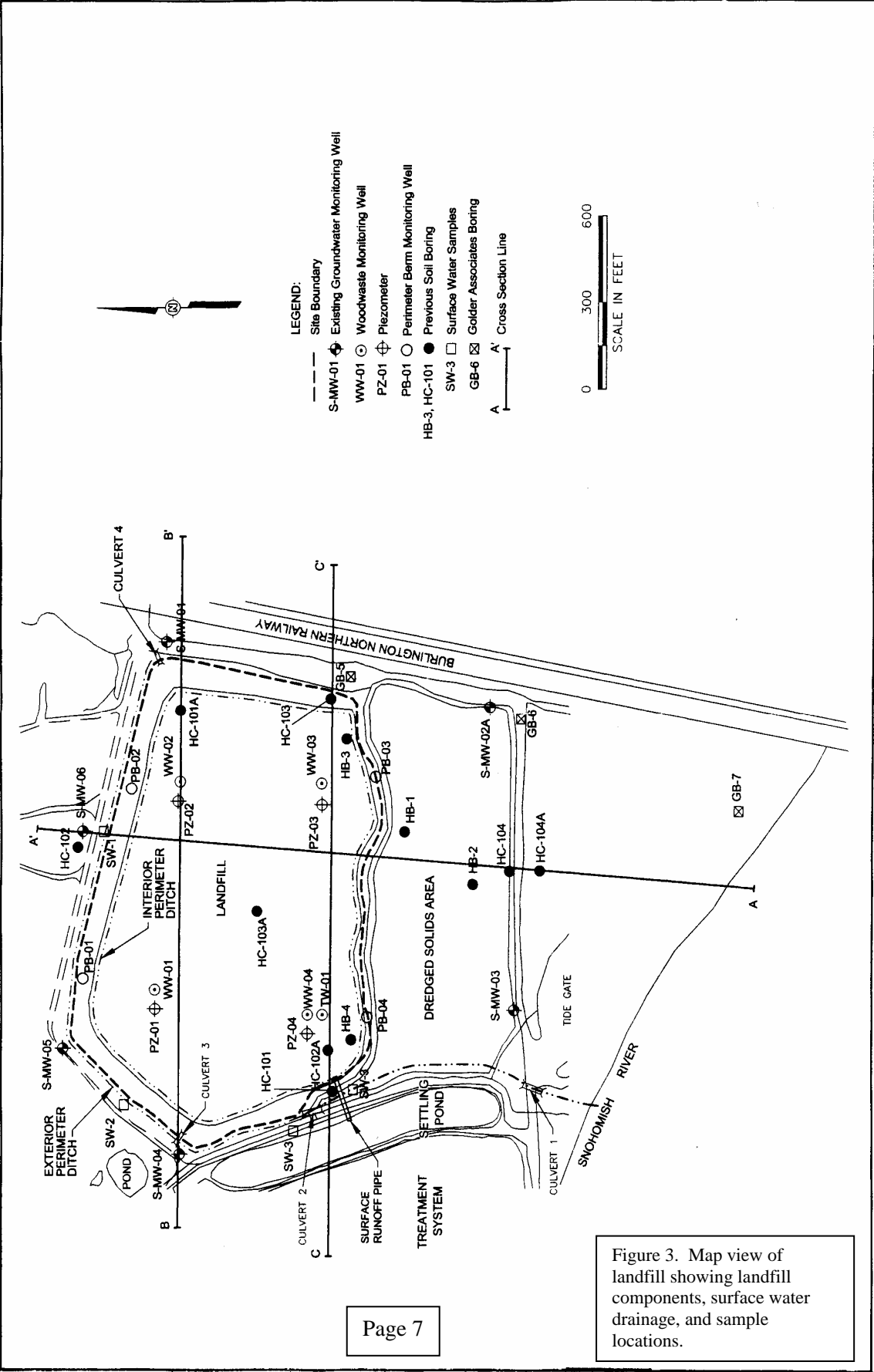
Weyerhaeuser completed additional field investigations in 2000 including quarterly ground water monitoring, elevation surveying of the landfill perimeter ditch, and evaluation of the hydraulic interaction of surface water in the perimeter ditch and Snohomish River with shallow ground water. Weyerhaeuser has conducted quarterly ground water monitoring at six site wells since 1987. Ground water samples are analyzed for metals, organic compounds, inorganic compounds, volatile organic compounds (VOCs), and total coliform bacteria. Weyerhaeuser annually reports the monitoring results to SHD.

LANDFILL HYDROLOGY

The landfill is surrounded by an exterior perimeter berm constructed of native soil or fill, and the berm is bordered on the west and north sides by an exterior perimeter ditch (Figure 3). An interior perimeter ditch was excavated approximately three feet into woodwaste in the north cell of the landfill and is parallel to the perimeter berm. The landfill surface was diked and graded to promote runoff to the interior perimeter ditch. Surface water runoff inside the perimeter berm of the north cell is conveyed by a network of channels and interior perimeter ditch, to a catch basin located on the east side of the north cell of the landfill. Water collected in the catch basin is pumped through a 12-inch diameter PVC pipe to the primary settling basin on the west side of the landfill.

An overflow pipe installed to drain surface water runoff from inside the south cell of the landfill also discharges water to the primary settling basin located on the west side of the landfill. The exterior perimeter ditch is hydraulically connected to the Snohomish River by a swing-style tidal gate south of the landfill. The exterior ditch receives surface water runoff from all sides of the landfill and the Foss Maritime log sort yard. The ditch also receives landfill leachate that seeps through the perimeter berm and other ground water that discharges to the perimeter ditch from areas around the landfill. Water in the exterior ditch currently exchanges with Snohomish River water during daily tidal fluctuations. However, after elimination of Outfall #005, this hydraulic exchange will no longer occur.

Water that is discharged to the primary settling basin west of the landfill is hydraulically connected to a larger wastewater treatment settling basin to the northwest by an overflow weir (Figure 2). The overflow weir is used to control the water level of the primary settling basin. The larger treatment basin is hydraulically connected to Steamboat Slough by a gate valve and pipe (Figure 2). The Steamboat Slough gate valve and pipe assembly is the main discharge outfall for the entire wastewater treatment system for both the old pulp mill and the WSIWL. Shallow ground water in the vicinity of the landfill occurs at approximately 0 to -3 feet National Geodetic Vertical Datum (NGVD). No domestic water supply wells exist within one mile of the site.



DISCHARGE OUTFALLS

Outfall #001

Currently, two discharge outfalls are in use at this facility, Outfall #001 and Outfall #005 (Figure 1 and Figure 2). However, the Permittee will be eliminating Outfall #005 as a condition of this permit. A compliance schedule to eliminate Outfall #005 and to install a lift station to convey collected waters to the primary settling basin, which will eventually discharge from Outfall #001, is required under Condition S5 in the permit. An engineering report discussing the plans and specifications for the outfall closure and lift station is required under Condition S5 in the permit. Outfall #001 discharges wastewater from the northernmost wastewater treatment settling basin through a gate valve and pipe that control wastewater discharge into Steamboat Slough. The discharge is manually controlled by opening the gate valve, and discharge only occurs when water levels in the treatment settling basins reach a level that necessitates the release of water. Records provided in the application by the Permittee for Outfall #001 show there were no discharge events from June 1997 through August 1997. Discharge events from September 1997 through March 1998 were associated with the maintenance of the prior NPDES permitted treatment system, specifically the hydraulic dredging project to remove collected biosolids. Therefore, the flows and pollutant loadings during that period are not representative of the current treatment system flows and pollutant loadings that have been estimated for the time after the lift station is installed and Outfall #005 is eliminated. There were no discharge events from April 1998 through June 2000. There were discharge events on January 31, 2001, and August 7, 2002, each averaging rates of approximately 5 mgd. The Permittee has estimated that after the lift station is installed and Outfall #005 is eliminated, there will be two (2) to three (3) discharge events per year at Outfall #001 with a maximum daily flow rate of 10.0 mgd and a long-term annual average flow rate of 0.015 mgd.

Outfall #005

As discussed under Outfall #001 (above), Outfall #005 will be eliminated in accordance with the compliance schedule under Condition S5 of the permit. Discharge elimination from Outfall #005 will be accomplished by blocking the discharge pipe. A lift station will be installed in the ditch line upstream from the blocked discharge pipe to convey collected water to the adjacent 60-acre treatment system. The source of the collected water will include stormwater runoff from a 30-acre drainage area around the woodwaste landfill (including most of the Foss Maritime log storage yard), leachate from the adjacent woodwaste landfill, and local ground water. The 60-acre treatment system discharges through Outfall #001 to Steamboat Slough.

PERMIT STATUS

The previous permit for this facility was issued under the fee category of a Pulp, Paper and Paper Board, Chemical Pulp Mill with Chlorine Bleaching on May 10, 1991. At Outfall #001, the previous permit limited the discharge to periods of outgoing tidal flow. At Outfall #001, the previous permit placed effluent limitations on Dioxin (2,3,7,8-TCDD) and Adsorbable Organic Halogens (AOX), 5-day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), pH, and temperature. The discharge of floating solids or visible foam in other than trace amounts was not permitted. The Permittee certified to the Department that biocides containing

chlorophenolics were not used. At Outfall #005, the previous permit only allowed surface water to be discharged that was uncontaminated by oil and grease, chemicals and solids from area wastewater and solids treatment, or industrial activities. The discharge water at Outfall #005 was not required to be monitored under the previous permit.

The Permittee submitted a permit application on July 19, 2000, requesting the wastewater discharge permit fee category be changed from Pulp, Paper, and Paper Board, Chemical Pulp Mill with Chlorine Bleaching to Solid Waste Site (<50 acres). The application was accepted by the Department on March 12, 2002. Renewal applications were submitted by the Permittee prior to the July 19, 2000, application to allow for administrative continuance of the previous permit.

This fact sheet and final permit follow two draft fact sheets and permits. The first fact sheet and draft permit were mailed out for public comment on December 23, 2002. After reviewing the first draft permit and discussing the conditions in the permit with the Department, the Permittee submitted revised EPA NPDES Forms 1 and 2C to the Department on April 1, 2003. The information in the documents provided by the Permittee notified the Department that the Permittee intends to eliminate the wastewaters currently discharging from Outfall #005 to the Snohomish River. Therefore, major revisions, including effluent limits and outfall locations, were made to the first draft permit and fact sheet, requiring the need for a revised draft permit and fact sheet. The Department mailed out a revised fact sheet and draft permit for public comment on June 2, 2003. The Department elected to retain the same number (WA-003197-6) as the first draft for the revised draft permit and the final permit.

The Department inserted a compliance schedule under Condition S5 in the permit to eliminate Outfall #005 and to install a lift station to convey collected waters to the primary settling basin. Therefore, all wastewater that previously discharged from Outfall #005 will now be conveyed through the 60-acre treatment system and eventually discharged through Outfall #001. An engineering report discussing the plans and specifications for the outfall closure and lift station is required under Condition S5 in the permit.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection by the Department's Water Quality Program on November 27, 2001. The purpose of the inspection was to verify the information provided in the new NPDES permit application. The wastewater treatment and monitoring components of the facility, including wastewater capture, containment, treatment, transport, and discharge outfalls were observed and evaluated for proper function. Monitoring wells and surface water sampling points were inspected. Since the Everett Kraft Pulp Mill closed on March 29, 1992, there have been no violations of the original permit for the past ten years. Several industrial development proposals were considered for the former mill site over the past ten years, but none have been approved or finalized. The previous permit was kept open over this ten-year time period to aid in the transfer of ownership of the site if a potential buyer had appeared. The mill site has been demolished, the previous permit has been discontinued, and a new permit is being issued to address the current use of the site. However, since this is an existing discharge, a new SEPA review will not be required.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge at Outfall #001 is reported in the NPDES permit application and in the submitted Discharge Monitoring Reports (DMRs). Because wastewater that previously discharged from Outfall #005 will now discharge from Outfall #001, the Permittee is required to conduct a new wastewater characterization evaluation on the wastewater from Outfall #001. After completion of the new lift station, elimination of Outfall #005, and redirecting previous Outfall #005 wastewater through Outfall #001, the Permittee will be required to monitor and adequately characterize the wastewater discharged from Outfall #001 for a period of at least one year from the effective date of the permit. If the results of the wastewater characterization are inadequate (i.e., due to a lack of discharge events and monitoring data) after one year, the wastewater characterization period may be extended an additional year on October 1st each year (on a yearly basis) at the discretion of the Department up to the expiration date of the permit. If the effluent testing at Outfall #001 establishes that there is reasonable potential that the discharge will cause or contribute to an excursion above a water quality criterion, the permit will be reopened and new effluent limits will be derived, imposed, and inserted in the permit. After the wastewater discharge has been adequately characterized, the monitoring plan and other permit requirements may be modified as well.

Discharge to the Snohomish River from Outfall #005 is temporarily allowed until Outfall #005 is eliminated in accordance with the compliance schedule under Condition S5 of the permit. The Department will not require effluent limits on the wastewater at Outfall #005, nor is the Permittee required to monitor wastewater from Outfall #005, during the interim period while permits are being obtained for the lift station and the lift station is being constructed, and Outfall #005 is eventually eliminated (see Condition S5 in the permit).

The current wastewater discharge at Outfall #001 is characterized for the following regulated parameters:

Table 1: Wastewater Characterization

OUTFALL #001 (Data From 1997 – 2002)	
Parameter	Concentration
Flow	Zero discharge from June to September (except for specific water quality testing, or unseasonable precipitation events). A maximum daily flow rate of 10.0 mgd and a long-term annual average flow rate of 0.015 mgd.
pH	7.3 – 8.5 S.U. (range from NPDES permit application and DMRs)
Temperature	4 - 16° C (39 - 60° F) (range from NPDES application and DMRs)
Chloride	960 mg/L (from one sample on 01/31/01)
Dioxin/Furan	Range results from two samples taken on 01/31/01. Units are in ppt (pg/ml). TCDD – ND(0.002 – 0.006); Range also includes samples from October and December 1997, and February and March 1998. 2,3,7,8-TCDD – ND(0.004 – 0.007); Range also includes a sample from 08/07/02 PCDD – ND (0.003 – 0.008) 1,2,3,7,8-PCDD – ND(0.003 – 0.008) HxCDD – ND(0.006 – 0.008) 1,2,3,6,7,8-HxCDD – ND(0.006 – 0.008) 1,2,3,4,7,8-HxCDD – ND(0.006 – 0.008)

OUTFALL #001 (Data From 1997 – 2002)	
Parameter	Concentration
	1,2,3,7,8,9-HxCDD – ND(0.006 – 0.008) HpCDD – 0.013 – 0.019 1,2,3,4,6,7,8-HpCDD – 0.009 – 0.013 OCDD – 0.035 – 0.042 TCDF – ND(0.005 – 0.005) 2,3,7,8-TCDF – ND(0.005 – 0.007); Range also includes a sample from 08/07/02 PCDF – ND(0.002 – 0.006) 1,2,3,7,8- PCDF – ND(0.002 – 0.006) 2,3,4,7,8- PCDF – ND(0.002 – 0.006) HxCDF – ND(0.004 – 0.006) 1,2,3,4,7,8-HxCDF – ND(0.004 – 0.006) 1,2,3,6,7,8-HxCDF – ND(0.004 – 0.006) 2,3,4,6,7,8-HxCDF – ND(0.004 – 0.006) 1,2,3,7,8,9-HxCDF – ND(0.004 – 0.006) HpCDF - ND(0.008 – 0.010) 1,2,3,4,6,7,8- HpCDF - ND(0.008 – 0.010) 1,2,3,4,7,8,9- HpCDF - ND(0.008 – 0.010) OCDF - ND(0.007 – 0.021)
AOX	0.19 - 0.25 mg/L (range from two samples taken on 08/07/02 and 01/31/01, respectively)
BOD ₅	< 3 mg/L; < 145 lbs/day (from NPDES application and DMR's)
TSS	3 mg/L; 125 lbs/day (from NPDES application and DMR's)

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in an NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3 and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the surface water quality standards (Chapter 173-201A WAC), ground water standards (Chapter 173-200 WAC), sediment quality standards (Chapter 173-204 WAC), or the national toxics rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the state of Washington were determined and included in this permit. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances, the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application.

If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

EFFLUENT LIMITATIONS

The technology-based, interim effluent limits for Outfall #001 are listed in Table 2. Because effluent that previously discharged from Outfall #005 will now be added to the effluent that currently discharges from Outfall #001, the Permittee is required in the permit to conduct a new wastewater characterization evaluation on the wastewater from Outfall #001. After completion of the new lift station, elimination of Outfall #005, and redirecting previous Outfall #005 wastewater through Outfall #001, the Permittee is required to continue to monitor and adequately characterize the wastewater discharged from Outfall #001 for a period of at least one (1) year from the effective date of the permit. If the results of the wastewater characterization are inadequate (i.e., due to a lack of discharge events and monitoring data) after one year, the wastewater characterization period may be extended an additional year on October 1st each year (on a yearly basis) at the discretion of the Department up to the expiration date of the permit. If the effluent testing at Outfall #001 establishes that there is reasonable potential that the discharge will cause or contribute to an excursion above a water quality criterion, the permit will be reopened and new effluent limits will be derived, imposed, and inserted in the permit.

The Permittee is required to comply with the effluent limits provided in Table 2 during the interim period (at least one [1] year from the effective date of the permit) while the effluent that is discharged from Outfall #001 is being characterized. The effluent limits required for the interim period for wastewater characterization are based on the parameters and average monthly effluent limits for nonhazardous waste landfills required in the Industrial Stormwater General Permit. Therefore, the interim effluent limits for this permit are technology-based, and are derived from best professional judgment.

Table 2: Interim Effluent Limits for Weyerhaeuser Smith Island Site.

OUTFALL #001	
Parameter	Interim Effluent Limit (Average Monthly)^a
5-day Biochemical Oxygen Demand (BOD ₅) Maximum Effluent Concentration	37 mg/L
Total Suspended Solids (TSS) Maximum Effluent Concentration	27 mg/L
pH	Shall be within the range 7.0 to 8.5 standard units (S.U.)
Ammonia	4.9 mg/L
Alpha Terpineol	0.016 mg/L
Benzoic Acid	0.071 mg/L
p-Cresol	0.014 mg/L
Phenol	0.015 mg/L
Zinc	0.11 mg/L

^aThe average monthly effluent limitation is defined as the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. If only one sample is taken during the calendar month, the average monthly effluent limitation applies to that sample. If only one sample is taken during the monitoring quarter, the average monthly effluent limitation applies to that sample.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that Waste Discharge Permits shall be conditioned such that the discharge will meet established surface water quality standards. The Washington State surface water quality standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the state of Washington's Water quality standards for surface waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the water quality standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA, 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDEGRADATION

The Washington State's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the Washington State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. Condition S7 of the permit requires the Permittee to conduct a receiving water and effluent study, and provide a report to the Department. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the water body's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The water quality standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known available and reasonable methods of prevention, control, and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

The Permittee has requested adding the option for a mixing zone in the permit. Ecology will consider granting a mixing zone provided an acceptable mixing zone analysis is completed. Section S6 of the permit provides the protocols for an acceptable mixing zone analysis.

DESCRIPTION OF THE RECEIVING WATER

The facility currently discharges to the Snohomish River through two outfalls (Outfall #001 and Outfall #005). However, Outfall #005 will be eliminated as a condition in this permit. The Snohomish River is designated as a Class A Marine receiving water in the vicinity of Outfall #001. Other nearby point source outfalls include, but are not limited to, the city of Marysville's Wastewater Treatment Plant (river mile [RM] 3.5 in Steamboat Slough), the city of Everett's Wastewater Treatment Plant discharges at two locations to the main stem at RM 2.5 and RM 3.5;

Tulalip Landfill; Foss Tug and Barge; Pacific Topsoils; Miller Shingle Company; Seacrest Marina/Harold Hansen Boat Yard; Dagmar's Marina; BMC West Corporation; Port of Everett; Buse log-buying yard; Kimberly Clark/Log Dumps; R. M. Paterson; S. I. Projects; and a concrete batch plant. Nearby nonpoint sources of pollutants include, but are not limited to, railroad yards and bridges; Highway 509 and I-5 bridges; storm water runoff from the cities of Everett and Marysville; and small farm and other agricultural operations.

Characteristic water uses in the area of the outfalls include the following: fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA, 1992). Criteria for this discharge are summarized below:

Fecal Coliform Bacteria	14.0 colonies/100 mL maximum geometric mean
Dissolved Oxygen	6.0 mg/L minimum
Temperature	16.0 degrees Celsius maximum or incremental increases above background
pH	7.0 to 8.5 standard units (S.U.)
Turbidity	Shall not exceed 5 NTU above background
Toxics	No toxics in toxic amounts

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Based on existing wastewater characterization data at Outfall #001, pollutant concentrations in the proposed discharge at Outfall #001 are not expected to exceed water quality criteria providing appropriate AKART continues to be applied. Therefore, a mixing zone may not be necessary for Outfall #001. In this case, the receiving water quality standards (Class A marine criteria) must be met in the effluent (discharge water) itself (at the end of the pipe [or tidal gate]).

A mixing zone is not authorized for Outfall #001. To be authorized a mixing zone, the Permittee must first conduct a mixing analysis at Outfall #001. Refer to Section S6. Effluent Mixing Study of the permit for requirements and guidance on conducting a mixing analysis for a mixing zone. If a mixing analysis is approved by the Department, the permit may be modified to authorize a mixing zone for Outfall #001.

WHOLE EFFLUENT TOXICITY

The water quality standards for surface waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests

measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity (death is the endpoint) and other WET tests measure chronic toxicity (growth, reproduction, and mortality are measured as endpoints).

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

In accordance with WAC 173-205-040, the Permittee's effluent at Outfall #001 has been determined to have the potential to contain toxic chemicals. The permit contains requirements for whole effluent toxicity testing as authorized by RCW 90.48.520 and 40 CFR 122.44 and in accordance with procedures in Chapter 173-205 WAC. The Permittee has conducted past acute toxicity tests at Outfall #001. All previous tests have resulted in 100% survival in 100% effluent. However, water quality conditions may change at Outfall #001 after elimination of discharge from Outfall #005, and redirecting the collected water through Outfall #001. Because only one acute toxicity test has been conducted at Outfall #001 in the past five (5) years and no acute toxicity tests have ever been conducted at Outfall #005, Condition S8 of the permit requires the Permittee to conduct additional acute toxicity tests on the final effluent at Outfall #001 to determine the presence and amount of acute (lethal) toxicity. After the elimination of Outfall #005, and after all waters from Outfall #005 have been redirected to discharge through Outfall #001, if three (3) consecutive acute toxicity tests result in 100% survival in 100% effluent, no additional acute toxicity testing will be required of the Permittee to the expiration date of the permit (see Condition S8 in the permit).

Due to the short duration of each discharge event at Outfall #001, chronic toxicity testing is not necessary and will not be required at this facility.

If acute toxicity is measured during effluent characterization at levels that, in accordance with WAC 173-205-050(2)(a), have a reasonable potential to cause receiving water toxicity, then the permit will set a limit on the acute toxicity. The permit will then require the Permittee to conduct WET testing in order to monitor for compliance with an acute toxicity limit. The permit also specifies the procedures the Permittee must use to come back into compliance if the limit is exceeded.

Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC₅₀, EC₅₀, IC₂₅, etc. All accredited labs have been provided the most recent version of the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*, which is referenced in the permit. EPA's current procedure manual is EPA-821-R-02-012, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* – 5th Ed., October 2002. Any Permittee interested in receiving a copy of this publication may call the Ecology Publications Distribution Center at (360) 407-7472 for a copy. Ecology recommends that Permittees send a copy of the acute or chronic toxicity section(s) of their permits to their laboratory of choice.

When the WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water toxicity, the Permittee will not be given WET limits.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard." The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

The acute toxicity limit is set relative to the zone of acute criteria exceedance (acute mixing zone) established in accordance with WAC 173-201A-100. The acute critical effluent concentration (ACEC) is the concentration of effluent existing at the boundary of the acute mixing zone during critical conditions. Because no acute mixing zone has been authorized in this permit, the ACEC equals one hundred percent effluent at Outfall #001.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is undergoing technology-based upgrades based on a Department permit, and thus should be regulated for human health-based criteria only after upgrades are completed.

A determination of the discharge's potential to cause an exceedance of the water quality standards was conducted as required by 40 CFR 122.44(d). The reasonable potential determination was evaluated with procedures given in the Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) and the Department's *Permit Writer's Manual* (Ecology Publication 92-109, July 1994). The determination indicated that the existing data to support a reasonable potential determination resulted in an ambiguous determination, thus the discharger will be required in this permit to submit the needed data before the next permit reissuance. Specifically, a new wastewater characterization evaluation is required at Outfall #001 under Condition S1 of the permit, and a receiving water analysis is required under Condition S7 of the permit.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the sediment management standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated ground water quality standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

The Department believes the Permittee's discharge has the potential to cause a violation of the ground water quality standards from leachate of solid waste. Solid waste control is discussed under Condition S4 in the proposed permit and under section "OTHER PERMIT CONDITIONS" below.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

In addition to the requirements in Condition S2, beginning with the first quarter of the year 2003, all facilities that discharge to waters listed as impaired by the state under Section 303(d) of the Clean Water Act must conduct quarterly monitoring of authorized discharges of stormwater to surface water. Samples must be analyzed for the parameters named on the 303(d) as causing impairment of the listed waters except for temperature which is not required and fecal coliform which is only required if there is a potential source from the industrial activity. Discharges to a water body subject to a TMDL must be consistent with the TMDL determination. Where the TMDL determination sets load allocations for new discharges or limits pollutant concentrations in the discharge, the Permittee must conduct monitoring for the named pollutant(s) as required by the TMDL. Because the WSIWL facility was not assigned a waste load allocation in the Lower Snohomish TMDL allocations study, the permit requires under Condition S1 that discharge to surface water from Outfall #001 is prohibited from July through October to assure compliance with the TMDL.

The aerators previously operating in the treatment ponds may need to be reactivated if the BOD₅, DO, and pH violate the water quality criteria. The Department will modify this permit if the monitoring data show violations to the water quality criteria. The Department will evaluate the monitoring data and use its prosecutorial discretion if the parameters violate TMDL's or water quality criteria.

LAB ACCREDITATION

With the exception of certain parameters, the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

SOLID WASTE CONTROL

Leachate is formed when liquids pass through a landfill removing contaminants and their degradation products from solid waste. Decay and fermentation produce gases (e.g., carbon dioxide and methane) and organic acids and result in the dissolution of chemical constituents such as iron and manganese from the waste. Landfills in western Washington may become partially or totally saturated by winter precipitation and, in unlined landfills (as is WSIWL), by horizontal or upward flow of ground water. The rate or degree of saturation and the subsequent leachate production are based on site-specific conditions and landfill operations. The amount of leachate produced and the rate of production is a function of the bulk chemical composition, particle size, and hydraulic conductivity of the refuse and the capacity of the cover and liner material to restrict infiltration of incident precipitation.

The Department has determined that the Permittee has a potential to cause pollution of the waters of the state from leachate of solid waste and has imposed the following conditions in the proposed permit:

1. The Permittee will be required to control all solid waste material in such a manner as to prevent its entry into state ground or surface water.
2. The Permittee will not allow leachate from its solid waste material to enter state waters without providing all known available and reasonable methods of treatment (AKART), nor allow such leachate to cause violations of Washington State's surface water quality standards, Chapter 173-201A WAC, or Washington State's ground water quality standards, Chapter 173-200 WAC.
3. The WSIWL has not received woodwaste since the Kraft Mill closed in 1992. Regulations governing solid waste management are found in Chapter 173-304 and/or Chapter 173-350 WAC. Snohomish County Health District has regulatory authority (jurisdiction) over management of the landfill. All ground water issues (including hydrogeologic characterization and ground water monitoring) either have been addressed or are currently being addressed, under the Solid Waste Permit for WSIWL in accordance with Chapter 173-304 and/or Chapter 173-350 WAC.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary, to meet water quality standards, sediment quality standards, or ground water standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, receiving water studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. This permit may not be used for anything other than SIC Code #4953 – Solid Waste Landfills – Nonhazardous – Nonputrescible. The Department has determined that this permit will expire on September 12, 2008.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

- 1994. Protection of Environment. Title 40 Code of Federal Regulations, July 1, 1994.
- 1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.
- 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.
- 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.
- 1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.
- 1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

- 1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

- 2002. National Pollutant Discharge Elimination System-Permit Program. Chapter 173-220 WAC, February 15, 2002.
- 1999. Snohomish River Estuary Total Maximum Daily Load. Publication # 99-57.
- 1997. Snohomish River Estuary Dry Season TMDL Study-Phase II. Publication # 97-325.

Fact Sheet for NDPES Permit WA-003197-6
Weyerhaeuser Smith Island Site

1997. Water Quality Standards for Surface Waters of the State of Washington. Chapter 173-201A WAC, November 18, 1997.
1995. Sediment Management Standards. Chapter 173-204 WAC, December 29, 1995.
1993. Whole Effluent Toxicity Testing and Limits. Chapter 173-205 WAC, October 6, 1993.
1990. Water Quality Standards for Ground Waters of the State of Washington. Chapter 173-200 WAC, October 31, 1990.
1988. Minimum Functional Standards-for Solid Waste Handling. Chapter 173-304 WAC, October 4, 1988.
1997. Water Pollution Control. Chapter 90.48 RCW, November 12, 1997.
1994. Permit Writer's Manual. Publication Number 92-109.

Weyerhaeuser Company.

2001. Supplemental Site Characterization and Annual Groundwater Monitoring Report, Weyerhaeuser Smith Island Woodwaste Landfill, Everett, Washington. Reported for Weyerhaeuser by IT Corporation and HWA GeoSciences, Inc., March 30, 2001.
2000. Weyerhaeuser Application for Permit Change, Smith Island Woodwaste Landfill Site, NPDES Permit, July 20, 2000.

Wright, R. M., and A. J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105 (EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

The Department has determined to issue a new permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in this fact sheet.

Public Notice of Application (PNOA) was published on the first draft on September 4 and 11, 2001. Public Notices of Draft (PNOD's) were published on the first draft and revised draft on December 23, 2002, and June 2, 2003, respectively. All drafts were published in the *Everett Herald* to inform the public that an application had been submitted, draft and fact sheets were available for review, and to invite comment on the issuance of this permit. Similar notices were mailed to agencies, groups, and individuals that have requested such notices for this geographic area.

The final permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below:

Water Quality Permit Coordinator
WA State Department of Ecology
Northwest Regional Office
3190 – 160th Avenue SE
Bellevue, WA 98008-5452

Further information may be obtained from the Department by telephone, (425) 649-7201, or by writing to the address listed above.

This permit and fact sheet were written by Rod Thompson.

APPENDIX B—GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART--An acronym for “all known available and reasonable methods of treatment.”

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational; source control; erosion and sediment control; and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the Federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's life span or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples--may be "time-composite" (collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction Activity--Clearing, grading, excavation, and any other activity which disturbs the surface of the land. Such activities may include road building; construction of residential houses, office buildings, or industrial buildings; and demolition activity.

Continuous Monitoring--Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction, e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business; from the development of any natural resource; or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of >80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of <80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the state of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/state permits issued under both state and federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)--A calculated value five times the MDL (method detection level).

Responsible Corporate Officer--A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function; any other person who performs similar policy- or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C—RESPONSE TO COMMENTS

Comment 1. The physical details on the location of Outfall #005 need to be presented on the permit cover page.

Response 1. Because the terms and conditions of this permit authorize a discharge from Outfall #005 for a limited period of time as discussed under Special Conditions S1.A, the physical details on the location of Outfall #005 were added to the cover page of the final permit.

Comment 2. The first three paragraphs under Special Condition S1.A. Landfill Leachate and Stormwater Discharges, should be removed from the permit and perhaps placed in the fact sheet.

Response 2. Because the first paragraph under Special Condition S1.A is discussed in the fact sheet, and the contents of the second and third paragraph are covered under General Condition G17, there is no need to restate them in this section of the permit. The three paragraphs are removed in the final permit.

Comment 3. Special Condition S1.A, second bullet - Prohibition in this proposed permit on the Outfall #001 discharge to Steamboat Slough during July through October should be removed. A significant reduction in the loading of oxygen-demanding pollutants to the Lower Snohomish River is imminent. When that occurs the “*Snohomish River Estuary Total Maximum Daily Load, Submittal Report*,” WDOE, August 1999, will lose practical relevance.

Discussion – Weyerhaeuser expects that a controlled discharge from Outfall #001 will only occur 1-3 times per year. As a matter of regulatory policy and sound science, any time limitation on Outfall #001 discharge is unwarranted. Please consider these facts:

- Despite the absence of a formal WLA, discharges of oxygen-demanding pollutants from Weyerhaeuser Outfalls #001 and #005 occurred before and have continued since the Lower Snohomish River TMDL was approved in early 2000. Ecology should note that there have been no recorded water quality standards violations for dissolved oxygen in the lower Snohomish River for at least the last 8 years (reference is Ecology’s compilation of *River and Stream Water Quality Monitoring* data on its web page). As such, there is no evidence to suggest that Weyerhaeuser Smith Island discharges cause receiving water impairment. More broadly, the agency lacks factual information to assert the lower Snohomish River is impaired for dissolved oxygen.
- The completion of the Kimberly-Clark outfall diffuser project is imminent. With it, significant loadings of oxygen-demanding pollutants from the cities of Marysville and Everett will be redirected from the lower Snohomish River to Everett Harbor. The technical under-pinning of the lower Snohomish River TMDL will be fundamentally changed. Within a month or two of the effective date of this five-year permit, capacity for oxygen-demanding pollutant loading into the Snohomish will become available. The Department may use its

best professional judgment to determine that the lower Snohomish River has sufficient capacity to formally acknowledge Weyerhaeuser's continued discharges during the critical period.

- The fact sheet identifies other NPDES-permitted dischargers. As a matter of regulatory equity, Weyerhaeuser asks whether these "significant point source outfalls" are similarly prohibited from discharging oxygen-demanding pollutants during the July – October critical period. As with Weyerhaeuser Smith Island Outfalls #001 and #005, the lower Snohomish River TMDL did not establish WLA's for these discharges.

Recommendation - The prohibition on discharges to Steamboat Slough from Outfall #001 during July through October should be removed. Alternatively, a sentence should be added to the second bullet in Special Condition S1.A, which says, "This prohibition on July – October discharge will be eliminated when the city of Marysville and/or the city of Everett wastewater discharges are diverted from the Snohomish River."

Response 3. Because the treatment system at Weyerhaeuser Smith Island Woodwaste Landfill (WSIWL) is precipitation driven and precipitation is normally low during the dry summer months, discharge of effluent from the treatment system is normally unnecessary. Therefore, in a normal precipitation season, there is no need for the Permittee to discharge effluent from the treatment system during the dry season, which is contemporaneous with critical conditions and the low-flow period. The ability to avoid discharge during critical conditions and the low-flow period is considered by the Department to be a necessary component of AKART. Prohibiting discharge during the low-flow period from July through October (critical conditions) will also assure compliance with the Snohomish River Estuary TMDL. Therefore, the condition prohibiting discharge to the Snohomish River from July through October each year for normal precipitation years is retained in the final permit.

The Department considers the WSIWL to be a "significant" discharger, at least until the wastewater discharge is adequately characterized, because the wastewater discharge contains landfill leachate generated from pulp and paper mill waste and possibly other unidentified landfill material.

Comment 4. Special Condition S1.A, fifth bullet - This bulleted paragraph should be removed. The section heading titled "Landfill Leachate and Stormwater Discharges" and the first bulleted paragraph offer direct statements on the source/type of wastewaters which are authorized for discharge. The fifth bulleted paragraph prohibiting the discharge of process water seems extraneous.

Response 4. The Department concludes that the permit must be completely clear in specifying that no process water from any source be discharged from Outfall #001. The Department does not define leachate from WSIWL as process water. Therefore, the fifth bullet under Special Condition S1.A is retained in the final permit for clarity.

Comment 5. Special Condition S1.A, Table 1 – The effluent limitations for pH and ammonia should be adjusted to conform to effluent limitations presented in 40 CFR 445.21. The Department used technology-based interim effluent limits for this permit that were derived from best professional judgment. The effluent limits are based on the parameters and average monthly effluent limits for nonhazardous waste landfills as specified in the Industrial Stormwater General Permit (which references 40 CFR Part 445 subpart B). The pH limitation in 40 CFR 445.21 is “Within the range 6 to 9” and the ammonia limitation is specified “as N.” The fact sheet offers no discussion as to why the proposed permit offers different limitations.

Response 5. Ammonia was specified as un-ionized NH_3 in Table 1 of the revised draft permit. Un-ionized NH_3 has been removed and specified “as N” in the final permit. The effluent limitations for the interim period for wastewater characterization must comply with the narrative water quality criteria (WAC 173-201A-030). Wastewater that discharges from Outfall #001 must comply with a pH range of 7.0 to 8.5 for marine water. Therefore, a pH range of 7.0 to 8.5 is retained in the final permit.

Comment 6. Special Condition S2.A, Table 2, and S2.C - The requirement for “continuous” flow measurement using an “appropriate flow measurement device” and requiring that the “...device shall be installed, calibrated, and maintained...” implies that Ecology expects Weyerhaeuser to modify its traditional discharge flow measurement approach. Weyerhaeuser’s traditional flow measurement technique relies on a calculation method using staff gauge observations before and after a controlled discharge event coupled with the known surface area of the treatment system. Given the expected infrequent discharge events and the lack of compelling need for precise information on flow volume, the agency should acknowledge that the traditional flow measurement technique used by Weyerhaeuser is acceptable.

Response 6. Accurate flow measurement is required for several fundamental calculations used in water quality models and statistical methods to determine both technology-based and water quality-based effluent limitations. The Department has determined that “continuous” flow measurement is the most accurate flow measurement currently available to determine discharge, wasteload, and effluent limits. Accurate determination of flow is critical in determining effluent limitations for BOD and TSS when applying water quality-based effluent limitations. Therefore, the requirement for continuous flow measurement is retained in the final permit.

Comment 7. Special Condition S2, Table 2. Interim Monitoring Schedule - A number of the footnotes specifying test methodologies should be changed to allow for the use of equally robust and lower cost methods. Chlorine, chromium+6, and cyanide should be eliminated from the list of parameters to be monitored for. It seems improbable these pollutants would be present in Outfall #001 wastewaters.

Discussion –

Parameter	Method Cited	Proposed Test Method	Reason
Alpha Terpineol	EPA 1625	EPA 8270C	Cost and efficiency. Method cited is overkill for this compound. Effluent limitation is less than the PQL.
Sulfate	EPA 330/SM4110B	EPA 300.0	Method cited is incorrect – probably a typo

Response 7. After additional review of the available surface water and ground water monitoring data, the Department agrees that chlorine, chromium (VI), and cyanide are unlikely to be present in the wastewater in quantities that could violate state water quality standards. Therefore, chlorine, chromium (VI), and cyanide were removed from the list of parameters to be monitored in the final permit.

Most methods, detectors, method detection levels and instrumentation detection levels, and quantitation levels proposed for this permit were derived from Table VI-3 of the Department's *Permit Writer's Manual* (Ecology Publication 92-109, July 1994). Other methods were derived in consultation with chemists from Ecology's Manchester Lab. The methods and levels in Table VI-3 are approved by USEPA for use in the NPDES permit program. A primary purpose of the interim monitoring period is to adequately characterize the wastewater and receiving water to enable the Department to conduct a meaningful reasonable potential analysis. If the results of the reasonable potential analysis show that the wastewater discharge has potential to exceed numeric and narrative water quality criteria, then the Department must calculate meaningful effluent limits. Therefore, the lowest (most conservative) method detection levels and quantitation levels were selected for this analysis during the interim period of effluent characterization.

Based on conversation with the Department's Manchester Lab personnel, Alpha Terpineol is not listed as one of the target analytes in Method 8270. It is listed in EPA Method 1625 (ICP/MS-Isotope Dilution). Method 1625 specifies the MDL should be no greater than 10 µg/L.

Sulfate EPA Methods 375.1, 375.3, and 375.4 are referenced in *Protection of Environment* (Title 40 Code of Federal Regulations, Part 136.1, July 1, 1994). Sulfate EPA Methods 330.0 and *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 4110B, are referenced in the Department's *Manchester Environmental Laboratory*, Lab Users Manual, Fourth Edition, January 1994.

Comment 8. Paragraphs under Special Condition S3.D and E mimic the content of Special Condition S2.B - One set could be eliminated.

Response 8. The paragraph under Special Condition S3.D was removed from the final permit since it is redundant with Special Condition S2.B.

Comment 9. S5. Engineering Report - This paragraph lacks detail and a valid delivery date.

Recommendation – Incorporate this requirement in Special Condition S6. Compliance Schedule (see Comment 10.)

Response 9. Special Condition S5. Engineering Report was removed and incorporated into S5. Compliance Schedule in the final permit.

Comment 10. Special Condition S6. (S5 in final permit) Compliance Schedule - The information contained in the first two paragraphs of this special condition would be more appropriate in the fact sheet. Identification of the required actions and delivery dates is appropriate for the Compliance Schedule.

Rather than fixing specific calendar dates for task completion, the sequence of activities should be based on the completion of the immediate prior task. For example, establishing the completion date for operational use of the Outfall #005 lift station by January 1, 2004, may not be meaningful. Unpredictable permitting timelines and seasonal weather constraints may not allow project completion by the end of this year. The timeline to successful permitting is presently unknown.

Response 10. The information in the first two paragraphs under Special Condition S6. (S5 in final permit) Compliance Schedule were removed in the final permit and inserted into the fact sheet.

One of the PCHB final rulings that resulted from the environmental group's appeal of the Department's Industrial Stormwater General NPDES Permit in PCHB 02-cases 162, 163, and 164, was that compliance schedules must contain specific dates to be in compliance with the state and federal regulations allowing compliance schedules. Therefore, specific calendar dates to complete the tasks required in the compliance schedule are retained in the final permit. The Department has determined that eighteen (18) months is, and has been, a reasonable time frame to obtain applicable permits and complete construction of such water pollution control projects.

Comment 11. Special Condition S7. (S6 in final permit) Effluent Mixing Study - Outfall #001 is a permitted discharge with an established and authorized mixing zone. A mixing zone should be incorporated into the final permit and considered an interim mixing zone until additional information is developed. The language of Special Condition S7.A should be adjusted to be more relevant. Weyerhaeuser is willing to conduct a mixing zone modeling analysis. Ecology should use best professional judgment to include a mixing zone in the final permit with dimensions defined by WAC 173-201A-100(7)(b). Information to support such a decision includes:

- Outfall #001 is an existing discharge (authorized by NPDES# WA-000300-0) with an existing mixing zone. This permit is in effect and has been administratively continued.
- The fact sheet provides no analysis on why a mixing zone would be eliminated for a permitted discharge. While the type of activity contributing wastewaters to the system has changed from the prior permit, that change has resulted in a much more benign discharge.
- All available information about the quality of Outfalls #001 and #005 wastewaters (and thus, presumably and eventually, the combined wastewaters discharging through #001) indicates these wastewaters have an insignificant pollutant content.
- The best information available demonstrates that Outfall #001 satisfies the WAC 173-201A-100 criteria to receive a mixing zone. For example, the fact sheet acknowledges AKART is provided. As proposed, this permit would not allow an Outfall #001 discharge during the "critical condition" of Steamboat Slough (which surely must be in the July – October time period). Wastewater quality assessed from Outfall #001 and Outfall #005 reveals no pollutants or pollutant loadings which would "have a reasonable potential to cause a loss of sensitive or important habitat, substantially interfere with the existing or characteristic uses of the water body, result in damage to the ecosystem, or adversely affect public health."

- The lack of an authorized mixing zone creates some potential for technical violations of water quality standards. Available information suggests that natural diurnal variations of pH and dissolved oxygen of the Outfall #001 discharge could yield instantaneous values outside the range of water quality criteria (note that numerous pH values above 8.5 and several DO values of “6 mg/l” were recorded during sampling on August 7, 2002). It is also possible that an instantaneous assessment of temperature could be above the water quality criterion (note that temperature values above 16.0° C were recorded on August 7, 2002). This is not an acceptable position for Weyerhaeuser.

If the Department chooses not to grant a mixing zone for Outfall #001, its response to this comment should detail the regulatory and fact-based support for that decision. We will be particularly interested in Ecology’s analysis of Outfall #001 and #005 characterization data which might suggest any risk to ambient water quality or localized habitat.

Finally, several details in Special Condition S7 are inconsistent. The section begins by suggesting the mixing zone analysis is discretionary (i.e., “If the Permittee conducts ...”), yet paragraph B indicates the Permittee “shall” submit a Plan of Study and Effluent Mixing Report. Paragraph C indicates that the Permittee “shall” determine the dilution ratio. The date for the mandatory submittal of the Plan of Study seems exceptionally late given the required submittal date for the Effluent Mixing Report. The discussion of “critical condition scenarios,” the “industrial effluent flow rate,” and references to “diffusers” suggest that this is boilerplate language which does not match the features of this proposed permit or the Smith Island treatment system.

Recommendation - Special Condition S7 should be re-titled “Interim Effluent Mixing Zone and Study” and rewritten to provide:

Prior to the completion of the mixing zone study, the boundaries of the mixing zone for Outfall #001 are defined as:

1. All waters within the discharge channel;
2. 250 feet in any horizontal direction from the mouth of the discharge channel.

The Permittee shall submit a mixing zone study plan to the Department for review and approval within thirty (30) days of permit issuance. The resulting Effluent Mixing Zone Report shall be submitted to the Department within forty-five (45) days of the study. The Department will consider the results of the mixing zone study, in combination with effluent characterization information and available ambient water quality information from Steamboat Slough, to reassess the potential of the discharge to exceed WAC 173-201A water quality standards. If insufficient information is available to reasonably complete this analysis and upon notification by the Department, the Permittee will be required to characterize Steamboat Slough water quality concurrent with an Outfall #001 discharge event. The Department may modify this permit to impose water quality-based effluent limitations to ensure achievement of the water quality standards.

Weyerhaeuser plans to use a spreadsheet modeling approach for the Effluent Mixing Zone Study to calculate volume-based dilution factors in accordance with Section 2.2 of Ecology’s *Guidance for Conducting Mixing Zone Analyses*. The model used may include PDS or RIVPLUM5, and

will be selected to best represent the dilution range of the outfall discharge. A variety of discharge conditions will be developed to represent a range of Outfall #001 discharge flows, tidal conditions, and river flow conditions, and these will be used in the modeling spreadsheet to encompass critical discharge conditions. Discharge conditions that will be represented include the following:

- Dry season low river flow stage
- Wet season - monthly mean minimum
- Ebb and Flood Tidal Stages (MLLW, MTL, MHW) and estimated currents at each stage
- Ambient density and temperature conditions during dry and wet seasons and tidal stages

The modeling analysis assumptions and results will be provided in a Dilution Analysis Technical Memorandum. When a discharge event occurs and monitoring data for Outfall #001 is available (Special Condition S2), these data will be summarized and used to determine the dilution(s) required to meet state water quality standards.

Response 11. A fundamental change resulting from passage of the Clean Water Act (CWA) was the explicit reversal of the 1948 Federal Water Pollution Control Act's premise that the ability to discharge polluted waste streams into the nation's waters was a legitimate use of the nation's waters. The CWA announced a national goal of completely eliminating the discharge of pollutants into the nation's water by 1985 [33 U.S.C. 1251 (a)(1)]. The message of the CWA and the state Water Pollution Control Act are to discourage, rather than encourage, mixing zones when effluent limitations can be met in the effluent (at end of pipe) by implementing AKART, BAT, BCT, BPT and BMP's.

WA-003197-6 is a new NPDES permit, and is no longer a renewal of an existing permit or under administrative continuance. Special Condition S1.IV of the previous permit WA-000300-0 authorized an interim dilution (mixing) zone for Outfall #001. The previous permit WA-000300-0 fact sheet explained the reasons for the interim mixing zone: "1) Rapid mixing of effluent with receiving water, which serves to minimize the impacts of a wastewater discharge, is not provided by the open channel discharge at Outfall #001; 2) Outfall #001 is an exposed discharge and the negative aesthetic impacts of the discharge can be significant; and 3) Outfall #001 discharges within 100 feet of the shoreline in an estuary. Discharges in such locations are discouraged, because of the ecological importance of estuarine shorelines to sport, food, and commercial fish and shellfish species." The previous permit stated that the mixing zone was considered interim, pending results of studies and work required under S.3.I.A, including a compliance schedule following a revision of the water quality standards (WAC 173-201) that occurred following the issue of the previous permit. The compliance schedule required a list of studies to be completed within given time frames. These studies were either never completed, or are now out of date. The previous permit and fact sheet stated that the Department may modify the permit such that no mixing zone is authorized for Outfall #001, in which case receiving water quality standards must be met in the effluent itself (at the "end of pipe").

The only parameters the Permittee has indicated could exceed water quality criteria are temperature and pH. These two parameters have only exceeded water quality criteria during the summer season. Since the final permit will prohibit discharge to surface water from Outfall #001 from July through October, these parameters should not exceed criteria. If BOD, temperature, or pH should ever increase to the point of exceeding water quality criteria during discharge events, the Department concludes that additional BMP's, such as reactivating additional aerators, could be implemented to reduce the concentrations of these parameters to compliance levels in the effluent.

A mixing zone has not been authorized in the final permit for the following reasons:

1) An updated mixing zone analysis has not been completed; 2) Based on current wastewater characterization data, a mixing zone may not be necessary for Outfall #001 since effluent limits should be met in the effluent (at end of pipe); 3) If, however, the results from the interim monitoring data indicate there is reasonable potential for the effluent to pollute (i.e., from an increase in pollutant toxicity due to synergism), then authorizing a mixing zone at this time would not be in compliance with WAC 173-201A-100(4) and (5); 4) Whether or not a mixing zone analysis is necessary may be more easily determined after the interim wastewater effluent characterization period has ended; and 5) The mixing zone analysis should be conducted at Outfall #001 after Outfall #005 has been eliminated and the effluent that originally discharged from Outfall #005 has been redirected through Outfall #001. This procedure should obtain the most meaningful results and eliminate any possibilities of missing reasonable potential to pollute due to toxic increases from such mechanisms as synergism resulting from the redirected effluent.

The language of Special Condition S7.A (S6 in final permit) was adjusted to be more consistent and relevant to this facility in the final permit. The Department has determined that the discussions on "critical condition scenarios" are relevant to this permit. The final permit does not allow wastewater discharge from July through October, which is most likely the time interval that contains critical conditions and low flow. However, the permit states that when determining acute and chronic mixing zone boundaries, the effluent flow rates to use for analyses are those that occur during the season in which critical condition **(or as close to critical condition as reasonably possible)** is likely to occur. Therefore, critical condition for this permit will most likely be an average of the flow rates from June and November (or as close to June and November as reasonably possible) discharges, since those months are closest to the July through October time interval.

Comment 12. Special Condition S8. (S7 in final permit) Receiving Water and Effluent Study - The objective of this Special Condition will be fundamentally addressed by other permit conditions and thus could be eliminated. Alternatively, a placeholder could be added to the language in Special Condition S7 to require a receiving water study if uncertainly remains on the potential of Outfall #001 to cause water quality standards violations.

Discussion – Special Condition S2 requires sampling and analysis of Outfall #001 for Ecology's pollutants of interest for what will effectively be each discharge event. Special Condition S7 requires an effluent mixing zone study and report. If Weyerhaeuser's suggested language for Special Condition S7 is accepted, the product of that work will be a report which evaluates

Outfall #001 wastewater mixing, wastewater chemical quality, and state water quality criteria. We will also note that Ecology's Water Quality Program will soon make available a compilation of surface water quality data and judgments about water quality criteria attainment in support of the 2003, 303(d) list development. This information, which is available to the Northwest Regional Office now, will address Steamboat Slough or lower Snohomish River attainment status against water quality standards.

Recommendation – Accept Weyerhaeuser's proposed redrafted Special Condition S7 language. This condition fundamentally satisfies the interests of both Ecology and Weyerhaeuser with a more reasonable and sequenced approach based on the history of Outfall #001 permitting and available discharge quality information.

Response 12. Effluent analysis and receiving water analysis are separate and distinct requirements, independent of a mixing zone analysis. Therefore, these special conditions are retained in the final permit regardless of whether a mixing zone analysis is completed or not. The sum of the receiving water (background) and effluent parameters must not exceed water quality criteria. Therefore, effluent and receiving water analyses are required to be conducted by the Permittee because the results of the analyses are needed by the Department to determine reasonable potential to cause a violation to the water quality standards, and if so, to also calculate meaningful effluent limits after the interim period of wastewater effluent characterization.

Comment 13. Special Condition S8. (S7 in final permit) Receiving Water and Effluent Study - As presently drafted, this proposed section has several deficiencies.

The introductory paragraph in S8 should specify that the Sampling and Quality Assurance Plan be submitted 30 days following permit issuance rather than on September 1, 2003.

Paragraph S8.A is redundant with S2. Monitoring Requirements. With an expected discharge frequency of 1-3 times per year, S2 effectively requires that every discharge event will be sampled and analyzed for the full list of specified analytes (i.e. no separate discharge events will be created solely to allow completion of S8) This paragraph should be eliminated.

With respect to paragraph S8.B, Ecology should explain the relevance of requiring analysis for total recoverable metals? The criteria for arsenic, chromium (+6), copper, lead, nickel, and zinc in WAC 173-201A are presented as the dissolved fraction. The requirement to analyze for total recoverable metals should be eliminated.

Ecology should recognize the need for a controlled discharge from Outfall #001 is likely to occur in the winter or spring of the year. This proposed permit prohibits a discharge during July – October. The requirement that the “time of sampling shall be as close as possible to the time of critical period (sic)” may not have much significance.

The requirement to submit the results of the receiving water study by September 1, 2004, with the Effluent Mixing Zone Report should be amended to eliminate a specific submittal date. See Comment 11.

Response 13. The Department has determined that using dates, rather than time intervals after completing certain tasks, provides more clarity and accuracy. Special Condition S8.A is retained in the final permit under S7.A to provide clarity to assure the effluent analysis will be conducted in the same manner and under the same conditions as those

under Special Condition S2. Special Condition S8.A is retained in the final permit to clarify that the interim monitoring plan will also suffice for the effluent analysis. The Department concurs that no separate discharge events will be created solely to allow completion of S8.

Metals expressed as “total recoverable” is a requirement of EPA for NPDES permits. The state of Washington water quality standards express metals as “total dissolved fraction.” Therefore, the final permit requires metals to be expressed as both total recoverable and total dissolved fraction.

“Critical period (sic)” was corrected to critical condition in the final permit. The final permit does not allow wastewater discharge from July through October, which is most likely the time interval that contains critical condition and low flow. However, the permit states: “The time of sampling shall be as close as possible to critical condition.” Therefore, critical condition for this permit will most likely be June and November (or as close to June and November as reasonably possible), since those months are closest to the July through October time interval.

Comment 14. Special Condition S9. (S8 in final permit) Acute Toxicity - Ecology should remove Special Condition S9. The Department has no factual information to suggest that Outfall #001 presents a “risk for aquatic toxicity” sufficient to trigger effluent characterization study criteria (WAC 173-205-050). The proposed monitoring requirements present several technical errors. An alternative approach to address Ecology’s interest in assessing acute effluent toxicity is offered.

Discussion

- Available information indicates that Outfall #001 wastewater discharge does not exhibit acute toxicity. The results of acute bioassay tests conducted on Outfall #001 over the past seven years are presented:

Date	Organism	Test Duration	% Survival in 100% Effluent
1/8/96	Rainbow trout	96 hr acute	100%
	<i>Daphnia pulex</i>	48 hr acute	100%
	Fathead minnow	48 hr acute	100%
1/21/98	Rainbow trout	96 hr acute	100%
8/7/02	Rainbow trout	96 hr acute	100%

- The discussion in S9.A offers Ecology’s view that the “water quality conditions may change at Outfall #001 after elimination of discharge Outfall #005, and redirecting the collected water through Outfall #001.” In the fact sheet, the Department declares the “Outfall #1 has been determined to have the potential to contain toxic chemicals.” However, the permit fact sheet offers no elaboration on what information the Department relied on to draw these conclusions. Available data fail to hint at the presence of any pollutants or pollutant loading which “may” result in the discharge of “toxics in toxic amounts” once discharged at Outfall #001. Ecology’s response to this comment should include an explanation of the agency’s assessment.

- The requirement to submit a “written report of toxicity tests effluent characterization data shall be submitted to the Department no later than January 15, 2004, within 60 days after the sample date,” should be eliminated. There is no assurance that any Outfall #001 discharge will occur by that date or that it would include the redirected waters from the Outfall #005 drainage.
- EPA recently published new editions of the procedure manuals for all whole effluent toxicity test methods. The permit should cite the revised manuals as shown below:

Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms - 5th Ed. October 2002. EPA-821-R-02-012.

- The proposed permit specifies a test method that is obsolete. Recent guidance, published by the Department of Ecology, states that the Inland Silverside (*Menidia beryllina*) should no longer be used in NPDES permitting. The Inland Silverside minnow should be deleted from the list of species approved for use in WET testing when results are intended to demonstrate compliance with an NPDES permit limit.
- Ecology’s proposal to establish the “acute critical effluent concentration” at 100% is not representative of actual stream conditions and thus inconsistent with WAC 173-201A. The definition of “Acute critical effluent concentration” intends for an assessment of toxic effects at the actual instream waste concentrations that will be encountered. Specifying an arbitrary fraction of the actual dilution available (and especially 0%) is contrary to Washington’s water quality standards:

WAC 173-201A-100(3) - *"Mixing zone determinations shall consider critical discharge conditions."*

WAC 173-201A-020 - *"Critical condition is when the physical, chemical, and biological characteristics of the receiving water environment interact with the effluent to produce the greatest potential adverse impact on aquatic biota and existing or characteristic water uses."* (emphasis added)

Should an effluent limitation for acute toxicity ever be established, an ACEC based on the actual concentration of Outfall #001 wastewater in Steamboat Slough must be established.

- WAC 173-201A-100 allows for different-sized mixing zones to be established for different pollutants. WAC 173-205 is the regulation to implement the narrative “no toxics in toxic amounts” water quality criterion found at WAC 173-201A-040(1). While Ecology has decided in this proposed permit not to provide a mixing zone for parameters with numeric criteria, the agency is certainly not precluded from offering a mixing zone for whole effluent toxicity. Available data, of course, strongly support that a mixing zone should be provided in the final permit. The eligibility criteria listed in WAC 173-201A-100 are met. The permit fact sheet acknowledges that AKART is in place. [WAC 173-201A-100(2)] The proposed permit prohibits Outfall #001 discharge during what surely must be considered the “critical discharge conditions.” [WAC 173-201A-100(3)] The favorable results of multiple species whole effluent toxicity testing presented above can only demonstrate that the habitat and biological criteria in WAC 173-201A-100(4) are met.

Recommendation – Ecology should recognize the mixing zone proposed by Weyerhaeuser in Comment 7. Ecology should eliminate Special Condition S9 for the reasons listed above. Weyerhaeuser is willing to conduct acute bioassay testing using rainbow trout on a sample from each Outfall #001 discharge event. Should there be an indication of fish toxicity, Ecology can reopen the permit to require a WAC 173-205 effluent toxicity characterization assessment.

Response 14. First and Second Bullet - The Department has determined that the combined discharge of stormwater runoff and woodwaste landfill leachate at the Weyerhaeuser Smith Island facility has a risk for aquatic toxicity and needs an effluent characterization for acute effluent toxicity as required under WAC 173-205-040. The Department based their determination on:

1. Weyerhaeuser Smith Island Woodwaste Landfill contains waste material from a Pulp and Paper Mill operation, which is an industry listed under Appendix A of 40 CFR part 122. WAC 173-205-040(c) specifies that industries in this category generate a risk for aquatic toxicity from their wastewater, and therefore require effluent characterization for acute and chronic whole effluent toxicity.
2. In reference to data in Appendix G of “*Supplemental Site Characterization and Annual Groundwater Monitoring Report – Weyerhaeuser Smith Island, Woodwaste Landfill; Everett, Washington,*” IT Corporation and HWA GeoSciences, March 2001, ammonia concentrations have occurred in both ground water and surface water samples that have exceeded both ground water and surface water quality criteria. Arsenic concentrations in ground water and surface water samples have exceeded ground water quality criteria. Therefore, the Department has determined that the discharge at Outfall #001 has potential to discharge toxics in toxic amounts. WAC 173-205-040(g) specifies that if the Department determines that any discharger has the potential to discharge toxics in toxic amounts, an effluent characterization for acute and chronic whole effluent toxicity is required.

Third Bullet - The Department is aware that past acute toxicity tests conducted at Outfall #001 have resulted in 100% survival in 100% effluent. However, the Department is requiring additional acute toxicity testing at Outfall #001 in the final permit for the following reasons:

1. Only one acute toxicity test has been conducted at Outfall #001 in the past five years.
2. No acute toxicity tests have been conducted at Outfall #005. The wastewater discharge at Outfall #005 will now be redirected and combined with the wastewater that discharges from Outfall #001. Therefore, the water quality characteristics may change from what they have been in the past at Outfall #001.

Because there is no assurance that any discharge event will occur at Outfall #001 by the specific date required in the final permit, or that the discharge would include the redirected waters from Outfall #005, the Department has modified the final permit to only require acute toxicity testing during the first three discharge events at Outfall #001 after

the redirected waters from Outfall #005 have been combined. However, the requirement to submit a written report of toxicity test effluent characterization data to the Department within sixty (60) days after the sample date is retained in the final permit.

Fourth Bullet – The most recent reference on whole effluent toxicity test methods, EPA-821-R-02-012, has been incorporated into the final permit.

Fifth Bullet – The Silverside minnow, *Menidia beryllina*, and its associated EPA test method are not obsolete. However, since Rainbow trout should yield similar results at the Silverside minnow, the Department removed Silverside minnow from the final permit.

Sixth Bullet – Since the Permittee has not yet conducted a mixing zone analysis, an acute mixing zone has not yet been authorized. Therefore, the acute critical effluent concentration (ACEC) must equal 100% effluent at Outfall #001.

Final Bullet and Recommendation – Same response as that following the first, second, and sixth bullet (above).

Comment 15 – Fact sheet description of Outfall #001 flow and pollutant loadings on pages 9 and 11 - The fact sheet discussion references effluent information which is not representative of the present treatment system operation.

Discussion – Outfall #001 discharge events which occurred from September 1997 through March 1998 were related to the maintenance of the NPDES permitted treatment system, in particular, the hydraulic dredging project to remove collected biosolids. Current treatment system operation is characterized by performance since that time and is reflected in the amended Form 2C submitted to the Department of Ecology on April 1, 2003.

Recommendation – Discharge information which is not representative of current treatment system operation should be removed from the fact sheet.

Response 15. The obsolete discharge information on flow and pollutant loadings presented in the draft fact sheet was removed in the final permit and replaced with current and more representative information on the present treatment system operation.